

SEQUENCE LISTING

```
<110> Burns, Jennifer M.
     Summers, Bretton
      Howard, Maureen C.
      Schall, Thomas J.
      ChemoCentryx, Inc.
<120> Compositions and Methods for Detecting and Treating
      Diseases and Conditions Related to Chemokine Receptors
<130> 019934-003360US
<140> US 10/698,541
<141> 2003-10-30
<150> US 60/337,961
<151> 2001-11-30
<150> US 60/338,100
<151> 2001-11-30
<150> US 10/245,850
<151> 2002-09-16
<150> US 60/434,912
<151> 2002-12-20
<150> US 10/452,015
<151> 2003-05-30
<160> 10
<170> PatentIn Ver. 2.1
<210> 1
<211> 1089
<212> DNA
<213> Homo sapiens
<223> G-protein coupled receptor (GPCR) CCX-CKR2 (RDC1)
     coding sequence
atggatctgc atctcttcga ctactcagag ccagggaact tctcggacat cagctggcca 60
tgcaacagca gcgactgcat cgtggtggac acggtgatgt gtcccaacat gcccaacaaa 120
agegteetge tetacaeget eteetteatt tacattttea tettegteat eggeatgatt 180
gccaactccg tggtggtctg ggtgaatatc caggccaaga ccacaggcta tgacacgcac 240
tqctacatct tqaacctggc cattgccgac ctgtgggttg tcctcaccat cccagtctgg 300
gtggtcagtc tcgtgcagca caaccagtgg cccatgggcg agctcacgtg caaagtcaca 360
cacctcatct tetecateaa cetettegge ageattttet teeteaegtg catgagegtg 420
gaccgctacc tctccatcac ctacttcacc aacaccccca gcagcaggaa gaagatggta 480
egeogtgteg tetgeateet ggtgtggetg etggeettet gegtgtetet geetgacace 540
tactacetga agacegteac gtetgegtec aacaatgaga cetactgeeg gteettetac 600
cccqagcaca gcatcaagga gtggctgatc ggcatggagc tggtctccgt tgtcttgggc 660
tttqccgttc ccttctccat tatcgctgtc ttctacttcc tgctggccag agccatctcg 720
qcqtccaqtq accaggagaa gcacagcagc cggaagatca tcttctccta cgtggtggtc 780
tteettqtet qetqqetgee etaccaegtq geggtgetge tggacatett etceateetg 840
cactacatcc ctttcacctg ccggctggag cacgccctct tcacggccct gcatgtcaca 900
```

cagtgcctgt cgctggtgca ctgctgcgtc aaccctgtcc tctacagctt catcaatcgc 960

aactacaggt acgagctgat gaaggccttc atcttcaagt actcggccaa aacagggctc 1020 accaagctca tcgatgcctc cagagtctca gagacggagt actctgcctt ggagcagagc 1080 accaaatga

<210> 2 <211> 362 <212> PRT <213> Homo sapiens <220> <223> G-protein coupled receptor (GPCR) CCX-CKR2 (RDC1) Met Asp Leu His Leu Phe Asp Tyr Ser Glu Pro Gly Asn Phe Ser Asp 10 Ile Ser Trp Pro Cys Asn Ser Ser Asp Cys Ile Val Val Asp Thr Val Met Cys Pro Asn Met Pro Asn Lys Ser Val Leu Leu Tyr Thr Leu Ser Phe Ile Tyr Ile Phe Ile Phe Val Ile Gly Met Ile Ala Asn Ser Val Val Val Trp Val Asn Ile Gln Ala Lys Thr Thr Gly Tyr Asp Thr His Cys Tyr Ile Leu Asn Leu Ala Ile Ala Asp Leu Trp Val Val Leu Thr Ile Pro Val Trp Val Val Ser Leu Val Gln His Asn Gln Trp Pro Met Gly Glu Leu Thr Cys Lys Val Thr His Leu Ile Phe Ser Ile Asn Leu 120 Phe Gly Ser Ile Phe Phe Leu Thr Cys Met Ser Val Asp Arg Tyr Leu 130 135 Ser Ile Thr Tyr Phe Thr Asn Thr Pro Ser Ser Arg Lys Lys Met Val 150 155 Arg Arg Val Val Cys Ile Leu Val Trp Leu Leu Ala Phe Cys Val Ser Leu Pro Asp Thr Tyr Tyr Leu Lys Thr Val Thr Ser Ala Ser Asn Asn Glu Thr Tyr Cys Arg Ser Phe Tyr Pro Glu His Ser Ile Lys Glu Trp Leu Ile Gly Met Glu Leu Val Ser Val Val Leu Gly Phe Ala Val Pro 215 Phe Ser Ile Ile Ala Val Phe Tyr Phe Leu Leu Ala Arg Ala Ile Ser Ala Ser Ser Asp Gln Glu Lys His Ser Ser Arg Lys Ile Ile Phe Ser 245 250

```
Tyr Val Val Val Phe Leu Val Cys Trp Leu Pro Tyr His Val Ala Val
            260
                                265
Leu Leu Asp Ile Phe Ser Ile Leu His Tyr Ile Pro Phe Thr Cys Arg
        275
                            280
Leu Glu His Ala Leu Phe Thr Ala Leu His Val Thr Gln Cys Leu Ser
Leu Val His Cys Cys Val Asn Pro Val Leu Tyr Ser Phe Ile Asn Arg
                    310
                                        315
Asn Tyr Arg Tyr Glu Leu Met Lys Ala Phe Ile Phe Lys Tyr Ser Ala
                325
Lys Thr Gly Leu Thr Lys Leu Ile Asp Ala Ser Arg Val Ser Glu Thr
Glu Tyr Ser Ala Leu Glu Gln Ser Thr Lys
<210> 3
<211> 1089 ·
<212> DNA
<213> Homo sapiens
<220>
<223> G-protein coupled receptor (GPCR) CCX-CKR2.2
      coding sequence
<400> 3
atggatetge acctettega etaegeegag eeaggeaact teteggaeat eagetggeea 60
tgcaacagca gcgactgcat cgtggtggac acggtgatgt gtcccaacat gcccaacaa 120
agegteetge tetacaeget etectteatt tacattttea tettegteat eggeatgatt 180
gccaactccg tggtggtctg ggtgaatatc caggccaaga ccacaggcta tgacacgcac 240
tgctacatct tgaacctggc cattgccgac ctgtgggttg tcctcaccat cccagtctgg 300
gtggtcagtc tcgtgcagca caaccagtgg cccatgggcg agctcacgtg caaagtcaca 360
cacctcatct tetecateaa cetetteage ggcattttet teeteaegtg catgagegtg 420
gaccgctacc tctccatcac ctacttcacc aacaccccca gcagcaggaa gaagatggta 480
cgccgtgtcg tctgcatcct ggtgtggctg ctggccttct gcgtgtctct gcctgacacc 540
tactacctga agaccgtcac gtctgcgtcc aacaatgaga cctactgccg gtccttctac 600
cccgagcaca gcatcaagga gtggctgatc ggcatggagc tggtctccgt tgtcttgggc 660
tttgccgttc ccttctccat tatcgctgtc ttctacttcc tgctggccag agccatctcg 720
gcgtccagtg accaggagaa gcacagcagc cggaagatca tcttctccta cgtggtggtc 780
ttccttgtct gctggctgcc ctaccacgtg gcggtgctgc tggacatctt ctccatcctg 840
cactacatcc ctttcacctg ccggctggag cacgccctct tcacggccct gcatgtcaca 900
cagtgcctgt cgctggtgca ctgctgcgtc aaccctgtcc tctacagctt catcaatcgc 960
aactacaggt acgagctgat gaaggccttc atcttcaagt actcggccaa aacagggctc 1020
accaagetea tegatgeete cagagtgteg gagaeggagt acteegeett ggageaaaac 1080
gccaagtga
<210> 4
<211> 362
<212> PRT
<213> Homo sapiens
<223> G-protein coupled receptor (GPCR) CCX-CKR2.2
```

Met Asp Leu His Leu Phe Asp Tyr Ala Glu Pro Gly Asn Phe Ser Asp Ile Ser Trp Pro Cys Asn Ser Ser Asp Cys Ile Val Val Asp Thr Val Met Cys Pro Asn Met Pro Asn Lys Ser Val Leu Leu Tyr Thr Leu Ser Phe Ile Tyr Ile Phe Ile Phe Val Ile Gly Met Ile Ala Asn Ser Val Val Val Trp Val Asn Ile Gln Ala Lys Thr Thr Gly Tyr Asp Thr His Cys Tyr Ile Leu Asn Leu Ala Ile Ala Asp Leu Trp Val Val Leu Thr Ile Pro Val Trp Val Val Ser Leu Val Gln His Asn Gln Trp Pro Met 105 Gly Glu Leu Thr Cys Lys Val Thr His Leu Ile Phe Ser Ile Asn Leu Phe Ser Gly Ile Phe Phe Leu Thr Cys Met Ser Val Asp Arg Tyr Leu Ser Ile Thr Tyr Phe Thr Asn Thr Pro Ser Ser Arg Lys Lys Met Val Arg Arg Val Val Cys Ile Leu Val Trp Leu Leu Ala Phe Cys Val Ser Leu Pro Asp Thr Tyr Tyr Leu Lys Thr Val Thr Ser Ala Ser Asn Asn Glu Thr Tyr Cys Arg Ser Phe Tyr Pro Glu His Ser Ile Lys Glu Trp Leu Ile Gly Met Glu Leu Val Ser Val Val Leu Gly Phe Ala Val Pro 210 215 Phe Ser Ile Ile Ala Val Phe Tyr Phe Leu Leu Ala Arg Ala Ile Ser Ala Ser Ser Asp Gln Glu Lys His Ser Ser Arg Lys Ile Ile Phe Ser 250 245 Tyr Val Val Val Phe Leu Val Cys Trp Leu Pro Tyr His Val Ala Val Leu Leu Asp Ile Phe Ser Ile Leu His Tyr Ile Pro Phe Thr Cys Arg 275 280 Leu Glu His Ala Leu Phe Thr Ala Leu His Val Thr Gln Cys Leu Ser 295

315

320

Leu Val His Cys Cys Val Asn Pro Val Leu Tyr Ser Phe Ile Asn Arg

310

Asn Tyr Arg Tyr Glu Leu Met Lys Ala Phe Ile Phe Lys Tyr Ser Ala 330 325 Lys Thr Gly Leu Thr Lys Leu Ile Asp Ala Ser Arg Val Ser Glu Thr 345 Glu Tyr Ser Ala Leu Glu Gln Asn Ala Lys 355 <210> 5 <211> 1089 <212> DNA <213> Homo sapiens <220> <223> G-protein coupled receptor (GPCR) CCX-CKR2.3 coding sequence <400> 5 atggatctgc atctcttcga ctactcagag ccagggaact tctcggacat cagctggcca 60 tgcaacagca gcgactgcat cgtggtggac acggtgatgt gtcccaacat gcccaacaa 120 agegteetge tetacaeget eteetteatt tacattttea tettegteat eggeatgatt 180 gccaactccg tggtggtctg ggtgaatatc caggccaaga ccacaggcta tgacacgcac 240 tgctacatct tgaacctggc cattgccgac ctgtgggttg tcctcaccat cccagtctgg 300 gtggtcagtc tcgtgcagca caaccagtgg cccatgggcg agctcacgtg caaagtcaca 360 cacctcatct totocatcaa cotottoggo agoattttot tootcacgtg catgagogtg 420 qaccqctacc tctccatcac ctacttcacc aacaccccca gcagcaggaa gaagatggta 480 egeogtgteg tetgeatect ggtgtggetg etggeettet gegtgtetet geetgaeace 540 tactacctga agaccgtcac gtctgcgtcc aacaatgaga cctactgccg gtccttctac 600 cccqaqcaca qcatcaaqqa qtqqctqatc qqcatgqagc tggtctccgt tgtcttgggc 660 tttqccqttc ccttctccat tqtcqctqtc ttctacttcc tgctggccag agccatctcg 720 qcqtccaqtq accaggagaa gcacagcagc cggaagatca tcttctccta cgtggtggtc 780 ttccttqtct qctqqttgcc ctaccacgtg gcggtgctgc tggacatctt ctccatcctg 840 cactacatec ettteacetg eeggetggag caegecetet teaeggeeet geatgteaca 900 cagtgcctgt cgctggtgca ctgctgcgtc aaccctgtcc tctacagctt catcaatcgc 960 aactacaggt acgagctgat gaaggccttc atcttcaagt actcggccaa aacagggctc 1020 accaagetea tegatgeete eagagtetea gagaeggagt actetgeett ggageagage 1080 accaaatga <210> 6 <211> 362 <212> PRT <213> Homo sapiens <223> G-protein coupled receptor (GPCR) CCX-CKR2.3 <400> 6 Met Asp Leu His Leu Phe Asp Tyr Ser Glu Pro Gly Asn Phe Ser Asp 5 10 Ile Ser Trp Pro Cys Asn Ser Ser Asp Cys Ile Val Val Asp Thr Val Met Cys Pro Asn Met Pro Asn Lys Ser Val Leu Leu Tyr Thr Leu Ser 40 Phe Ile Tyr Ile Phe Ile Phe Val Ile Gly Met Ile Ala Asn Ser Val

55

•	Val 65	Val	Trp	Val	Asn	Ile 70	Gln	Ala	Lys	Thr	Thr 75	Gly	Tyr	Asp	Thr	His 80	
•	Cys	Tyr	Ile	Leu	Asn 85	Leu	Ala	Ile	Ala	Asp 90	Leu	Trp	Val	Val	Leu 95	Thr	
	Ile	Pro	Val	Trp 100	Val	Val	Ser	Leu	Val 105	Gln	His	Asn	Gln	Trp 110	Pro	Met	
	Gly	Glu	Leu 115	Thr	Cys	Lys	Val	Thr 120	His	Leu	Ile	Phe	Ser 125	Ile	Asn	Leu	
	Phe	Gly 130	Ser	Ile	Phe	Phe	Leu 135	Thr	Cys	Met	Ser	Val 140	Asp	Arg	Tyr	Leu	
	Ser 145	Ile	Thr	Tyr	Phe	Thr 150	Asn	Thr	Pro	Ser	Ser 155	Arg	Lys	Lys	Met	Val 160	
-	Arg	Arg	Val	Val	Cys 165	Ile	Leu	Val	Trp	Leu 170	Leu	Ala	Phe	Cys	Val 175	Ser	
	Leu	Pro	Asp	Thr 180	Tyr	Tyr	Leu	Lys	Thr 185	Val	Thr	Ser	Ala	Ser 190	Asn	Asn	
	Glu	Thr	Tyr 195	Cys	Arg	Ser	Phe	Tyr 200	Pro	Glu	His	Ser	Ile 205	Lys	Glu	Trp	
	Leu	Ile 210	Gly	Met	Glu	Leu	Val 215	Ser	Val	Val	Leu	Gly 220	Phe	Ala	Val	Pro	
	Phe 225	Ser	Ile	Val	Ala	Val 230	Phe	Tyr	Phe	Leu	Leu 235	Ala	Arg	Ala	Ile	Ser 240	
	Ala	Ser	Ser	Asp	Gln 245	Glu	Lys	His	Ser	Ser 250	Arg	Lys	Ile	Ile	Phe 255	Ser	
	Tyr	Val	Val	Val 260	Phe	Leu	Val	Cys	Trp 265	Leu	Pro	Tyr	His	Val 270	Ala	Val	
	Leu	Leu	Asp 275	Ile	Phe	Ser	Ile	Leu 280	His	Tyr	Ile	Pro	Phe 285	Thr	Cys	Arg	
	Leu	Glu 290	His	Ala	Leu	Phe	Thr 295	Ala	Leu	His	Val	Thr 300	Gln	Cys	Leu	Ser	
	305					310			Val		315					320	
					325				Ala	330					335		
				340					Asp 345		Ser	Arg	Val	Ser 350	Glu	Thr	
	Glu	Tyr	Ser 355	Ala	Leu	Glu	Gln	Ser 360	Thr	Lys							

```
<211> 1089
<212> DNA
<213> Homo sapiens
<223> G-protein coupled receptor (GPCR) CCX-CKR2.4
      coding sequence
atggatetge atetettega etaeteagag ecagggaaet teteggaeat eagetggeea 60
tqcaacaqca qcgactgcat cgtggtggac acggtgatgt gtcccaacat gcccaacaaa 120
agggtcctgc tctacacgct ctccttcatt tacattttca tcttcgtcat cggcatgatt 180
gccaactccg tggtggtctg ggtgaatatc caggccaaga ccacaggcta tgacacgcac 240
tgctacatct tgaacctggc cattgccgac ctgtgggttg tcctcaccat cccagtctgg 300
gtggtcagtc tcgtgcagca caaccagtgg cccatgggcg agctcacgtg caaagtcaca 360
cacctcatct tetecateaa cetettegge ageattttet teeteaegtg catgagegtg 420
gaccgctacc tctccatcac ctacttcacc aacaccccca gcagcaggaa gaagatggta 480
egeogtgteg tetgeatect ggtgtggetg etggeettet gegtgtetet geetgaeace 540
tactacctga agaccgtcac gtctgcgtcc aacaatgaga cctactgccg gtccttctac 600
cccgagcaca gcatcaagga gtggctgatc ggcatggagc tggtctccgt tgtcttgggc 660
tttgccgttc ccttctccat tatcgctgtc ttctacttcc tgctggccag agccatctcg 720
gcgtccagtg accaggagaa gcacagcagc cggaagatca tcttctccta cgtggtggtc 780
ttccttgtct gctggctgcc ctaccacgtg gcggtgctgc tggacatctt ctccatcctg 840
cactacatec etttcacetg ceggetggag cacgecetet teaeggeeet geatgtcaca 900
cagtgcctgt cgctggtgca ctgctgcgtc aaccctgtcc tctacagctt catcaatcgc 960
aactacaggt acgagctgat gaaggccttc atcttcaagt actcggccaa aacagggctc 1020
accaagetea tegatgeete cagagtetea gagaeggagt actetgeett ggageagage 1080
accaaatga
<210> 8
<211> 362
<212> PRT
<213> Homo sapiens
<223> G-protein coupled receptor (GPCR) CCX-CKR2.4
<400> 8
Met Asp Leu His Leu Phe Asp Tyr Ser Glu Pro Gly Asn Phe Ser Asp
Ile Ser Trp Pro Cys Asn Ser Ser Asp Cys Ile Val Val Asp Thr Val
Met Cys Pro Asn Met Pro Asn Lys Ser Val Leu Leu Tyr Thr Leu Ser
                                                  45
         35
                             40
Phe Ile Tyr Ile Phe Ile Phe Val Ile Gly Met Ile Ala Asn Ser Val
Val Val Trp Val Asn Ile Gln Ala Lys Thr Thr Gly Tyr Asp Thr His
                     70
Cys Tyr Ile Leu Asn Leu Ala Ile Ala Asp Leu Trp Val Val Leu Thr
Ile Pro Val Trp Val Val Ser Leu Val Gln His Asn Gln Trp Pro Met
                                105
                                                     110
```

<210> 7

Gly Glu Leu Thr Cys Lys Val Thr His Leu Ile Phe Ser Ile Asn Leu 115

Phe Gly Ser Ile Phe Phe Leu Thr Cys Met Ser Val Asp Arg Tyr Leu 130

130

130

140

150

160

170

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

180

Ser Ile Thr Tyr Phe Thr Asn Thr Pro Ser Ser Arg Lys Lys Met Val 145 150 155 160

Arg Arg Val Val Cys Ile Leu Val Trp Leu Leu Ala Phe Cys Val Ser 165 170 175

Leu Pro Asp Thr Tyr Tyr Leu Lys Thr Val Thr Ser Ala Ser Asn Asn 180 185 190

Glu Thr Tyr Cys Arg Ser Phe Tyr Pro Glu His Ser Ile Lys Glu Trp 195 200 205

Leu Ile Gly Met Glu Leu Val Ser Val Val Leu Gly Phe Ala Val Pro 210 215 220

Phe Ser Ile Ile Ala Val Phe Tyr Phe Leu Leu Ala Arg Ala Ile Ser 225 230 235 240

Ala Ser Ser Asp Gln Glu Lys His Ser Ser Arg Lys Ile Ile Phe Ser 245 250 255

Tyr Val Val Phe Leu Val Cys Trp Leu Pro Tyr His Val Ala Val 260 265 270

Leu Leu Asp Ile Phe Ser Ile Leu His Tyr Ile Pro Phe Thr Cys Arg 275 280 285

Leu Glu His Ala Leu Phe Thr Ala Leu His Val Thr Gln Cys Leu Ser 290 295 300

Leu Val His Cys Cys Val Asn Pro Val Leu Tyr Ser Phe Ile Asn Arg 305 310 315 320

Asn Tyr Arg Tyr Glu Leu Met Lys Ala Phe Ile Phe Lys Tyr Ser Ala 325 330 335

Lys Thr Gly Leu Thr Lys Leu Ile Asp Ala Ser Arg Val Ser Glu Thr 340 345 350

Glu Tyr Ser Ala Leu Glu Gln Ser Thr Lys 355 360

<210> 9

<211> 1089

<212> DNA

<213> Homo sapiens

<220>

<223> G-protein coupled receptor (GPCR) CCX-CKR2.5
 coding sequence

<400> 9

atggatctgc atctcttcga ctactcagag ccagggaact tctcggacat cagctggccg 60 tgcaacagca gcgactgcat cgtggtggac acggtgatgt gtcccaacat gcccaacaaa 120

```
agegteetge tetacaeget etectteatt tacattttea tettegteat eggeatgatt 180
gccaactccg tggtggtctg ggtgaatatc caggccaaga ccacaggcta tgacacgcac 240
tgctacatct tgaacctggc cattgccgac ctgtgggttg tcctcaccat cccagtctgg 300
gtggtcagtc tcgtgcagca caaccagtgg cccatgggcg agctcacgtg caaagtcaca 360
cacctcatct tetecateaa cetetteage ageattttet teeteaegtg catgagegtg 420
gaccgctacc tctccatcac ctacttcacc aacaccccca gcagcaggaa gaagatggta 480
egeogtgteg tetgeatect ggtgtggetg etggeettet gegtgtetet geetgaeace 540
tactacetga agacegteac gtetgegtec aacaatgaga cetactgeeg gteettetac 600
cccgagcaca gcatcaagga gtggctgatc ggcatggagc tggtctccgt tgtcttgggc 660
tttgccgttc ccttctccat tatcgctgtc ttctacttcc tgctggccag agccatctcg 720
gcgtccagtg accaggagaa gcacagcagc cggaagatca tcttctccta cgtggtggtc 780
ttccttgtct gctggttgcc ctaccacgtg gcggtgctgc tggacatctt ctccatcctg 840
cactacatcc ctttcacctg ccggctggag cacgccctct tcacggccct gcatgtcaca 900
cagtgcctgt cgctggtgca ctgctgcgtc aaccctgtcc tctacagctt catcaatcgc 960
aactacaggt acgagctgat gaaggccttc atcttcaagt actcggccaa aacagggctc 1020
accaagetea tegatgeete cagagtetea gagaeggagt acteegeett ggageagage 1080
accaaatga
```

```
<210> 10
<211> 362
<212> PRT
<213> Homo sapiens
<223> G-protein coupled receptor (GPCR) CCX-CKR2.5
<400> 10
Met Asp Leu His Leu Phe Asp Tyr Ser Glu Pro Gly Asn Phe Ser Asp
Ile Ser Trp Pro Cys Asn Ser Ser Asp Cys Ile Val Val Asp Thr Val
Met Cys Pro Asn Met Pro Asn Lys Ser Val Leu Leu Tyr Thr Leu Ser
Phe Ile Tyr Ile Phe Ile Phe Val Ile Gly Met Ile Ala Asn Ser Val
Val Val Trp Val Asn Ile Gln Ala Lys Thr Thr Gly Tyr Asp Thr His
                     70
Cys Tyr Ile Leu Asn Leu Ala Ile Ala Asp Leu Trp Val Val Leu Thr
Ile Pro Val Trp Val Val Ser Leu Val Gln His Asn Gln Trp Pro Met
                               . 105
                                                     110
            100
Gly Glu Leu Thr Cys Lys Val Thr His Leu Ile Phe Ser Ile Asn Leu
                            120
Phe Ser Ser Ile Phe Phe Leu Thr Cys Met Ser Val Asp Arg Tyr Leu
                        135
Ser Ile Thr Tyr Phe Thr Asn Thr Pro Ser Ser Arg Lys Lys Met Val
```

150

165

170

Arg Arg Val Val Cys Ile Leu Val Trp Leu Leu Ala Phe Cys Val Ser

Leu Pro Asp Thr Tyr Tyr Leu Lys Thr Val Thr Ser Ala Ser Asn Asn 185 180 Glu Thr Tyr Cys Arg Ser Phe Tyr Pro Glu His Ser Ile Lys Glu Trp 200 Leu Ile Gly Met Glu Leu Val Ser Val Val Leu Gly Phe Ala Val Pro 215 Phe Ser Ile Ile Ala Val Phe Tyr Phe Leu Leu Ala Arg Ala Ile Ser Ala Ser Ser Asp Gln Glu Lys His Ser Ser Arg Lys Ile Ile Phe Ser Tyr Val Val Val Phe Leu Val Cys Trp Leu Pro Tyr His Val Ala Val 265 Leu Leu Asp Ile Phe Ser Ile Leu His Tyr Ile Pro Phe Thr Cys Arg Leu Glu His Ala Leu Phe Thr Ala Leu His Val Thr Gln Cys Leu Ser 295 Leu Val His Cys Cys Val Asn Pro Val Leu Tyr Ser Phe Ile Asn Arg Asn Tyr Arg Tyr Glu Leu Met Lys Ala Phe Ile Phe Lys Tyr Ser Ala 325 330 Lys Thr Gly Leu Thr Lys Leu Ile Asp Ala Ser Arg Val Ser Glu Thr Glu Tyr Ser Ala Leu Glu Gln Ser Thr Lys 360